IN THE CLAIMS:

The claims are as follows:

1.   (Original)   A method for inserting breakpoints in a program being debugged, comprising:

identifying a statement for the program being debugged;

determining which basic block contains the statement;

determining which blocks control execution of the basic block; and

inserting a breakpoint at each branch contained in the blocks controlling execution of the basic block.

2.   (Original)   The method of claim 1, wherein the statement is the location where the program being debugged halted execution.

3.   (Original)   The method of claim 1, wherein the blocks controlling execution of the basic block are blocks on which the basic block is control dependent.

4.   (Original)   The method of claim 1, wherein identifying the statement comprises identifying a statement that may modify a program variable.

5.   (Original)   The method of claim 4, wherein identifying the statement that may modify a program variable comprises accessing a table comprising the variable mapped to statements that may modify the variable.

6.   (Original)   The method of claim 1, wherein identifying the statement comprises identifying statements associated with loop latches.

7.   (Original)   The method of claim 6, wherein identifying statements associated with loop latches comprises accessing tables comprising the basic block mapped to the loop latches.

8.   (Original)   The method of claim 1, wherein identifying the statement comprises identifying a currently executing statement of each of a plurality of subprograms.

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9.   (Original)   The method of claim 8, wherein each of the plurality of subprograms is a portion of the program being debugged and performs a specific task.

10.   (Original)   The method of claim 8, wherein identifying the currently executing statement comprises accessing a table comprising the plurality of subprograms mapped to its respective currently executing statement.

11.   (Original)   The method of claim 8, wherein the blocks controlling execution of the basic block are blocks on which the basic block is control dependent.

12.   (Original)   A computer system comprising at least one processor configured to execute a debugging program, wherein the processor, when executing the debugging program, is configured to perform an operation comprising:

identifying a statement for the program being debugged;

determining which basic block contains the statement;

determining which blocks control execution of the basic block; and

inserting a breakpoint at each branch contained in the blocks controlling execution of the basic block.

13.   (Original)   The computer system of claim 12, wherein identifying the statement comprises:

identifying a program variable; and

determining which statements may modify the variable.

14.   (Original)   The computer system of claim 12, wherein identifying the statement comprises:

determining a plurality of sets of loop latches for the basic block; and

identifying the statements associated with loop latches.

15.   (Original)   The computer system of claim 12, wherein identifying the statement comprises:

identifying a currently executing statement of a plurality of subprograms.

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16.   (Original)   A signal bearing medium, comprising a program which, when executed by a processor, performs an operation, comprising:

identifying a statement for the program being debugged;

determining which basic block contains the statement;

determining which blocks control execution of the basic block; and

inserting a breakpoint at each branch contained in the blocks controlling execution of the basic block.

17.   (Original)   The signal bearing medium of claim 16, wherein the statement is the location where the program being debugged halted execution.

18.   (Original)   The signal bearing medium of claim 16, wherein the blocks controlling execution of the basic block are blocks on which the basic block is control dependent.

19.   (Original)   The signal bearing medium of claim 16, wherein identifying the statement comprises identifying a statement that may modify a program variable.

20.   (Original)   The signal bearing medium of claim 19, wherein identifying the statement that may modify a program variable comprises accessing a table comprising the variable mapped to statements that may modify the variable.

21.   (Original)   The signal bearing medium of claim 16, wherein identifying the statement comprises identifying statements associated with loop latches.

22.   (Original)   The signal bearing medium of claim 21, wherein identifying statements associated with loop latches comprises accessing tables comprising the basic block mapped to the loop latches.

23.   (Original)   The signal bearing medium of claim 16, wherein identifying the statement comprises identifying a currently executing statement of each of a plurality of subprograms.

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24. (Original) The signal bearing medium of claim 23, wherein each of the plurality of subprograms is a portion of the program being debugged and performs a specific task.

25. (Original) The signal bearing medium of claim 23, wherein identifying the currently executing statement comprises accessing a table comprising the plurality of subprograms mapped to its respective currently executing statement.

26. (Original) The signal bearing medium of claim 23, wherein the .blocks controlling execution of the basic block are blocks on which the basic block is control dependent.

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